Amendments to the Claims

Please cancel Claims 2, 3, 5, 7, 9, 11, 13, 14, 16, 18, 20 and 22 without prejudice to or disclaimer of the subject matter recited therein.

Please amend Claims 1, 4, 6, 8, 10, 12, 15, 17, 19 and 21, and add new Claim 23 to read as follows.

1. (Currently amended) An ink jet recording apparatus for executing recording with use of a recording head, said apparatus provided with a CPU having plural modes including a mode to reduce power consumption by suspending a clock signal as an operational mode, and receiving a signal from power switching means as an NMI interrupt signal for the execution of an NMI interrupt process, said apparatus comprising:

non-volatile memory means for retaining a power supply status flag;

user logic circuit means for outputting a trigger signal based on a signal from the CPU;

a mask signal generating portion for receiving the trigger signal to generate an NMI interrupt mask signal; and

a gate circuit for making the signal from the power switching means invalid by the mask ~~signal; and~~ signal,

~~control means for initiating operation of the recording apparatus in accordance with the flag at the time of the execution of the NMI interrupt process by the input of the signal from the power switching means, changing the flag, changing the~~

~~operational mode of the CPU, and setting said user logic circuit means to prohibit the NMI interrupt until the operation is completed, and enabling said user logic circuit means to output the trigger signal in accordance with the setting, and said mask signal generating portion to generate the mask signal for making the signal from the power switching means invalid~~ wherein in the NMI interrupt process, said user logic circuit and said mask signal generating portion are set to prohibit the NMI interrupt, and then a capping operation of the recording head is executed if discriminated that a power supply status flag is ON, and said user logic circuit and said mask signal generating portion are set to cancel prohibition of the NMI interrupt after the capping operation is completed, and then setting is made to shift to a mode for reducing the power consumption.

Claims 2 and 3 (cancelled)

4. (Currently amended) An ink jet recording apparatus according to Claim 1, wherein in the NMI interrupt process, if the power supply status flag is OFF, ~~power supply ON is operated as the operation to change the flag to ON, and as the operational mode change of the CPU, the clock signal is suspended and the mode is changed from the mode for reducing the power consumption~~ a recovery operation of the recording head is executed, and then the power supply status flag is changed to ON to execute a cancelling process of prohibition of the NMI interrupt after the recovery operation is completed.

Claim 5 (cancelled)

6. (Currently amended) An ink jet recording apparatus provided with a CPU ~~having plural modes including a mode to reduce power consumption by suspending a clock signal as an operational mode, and executing an NMI interrupt process with input of a signal from power switching means as an NMI interrupt signal~~ for executing an NMI interrupt process with input of a signal from power switching means as an NMI interrupt signal and a motor for executing a recording operation with use of a recording head, comprising:

power supply means for generating a first voltage to be supplied to the CPU and the power switching means and a second voltage to be supplied to the motor;

abnormality detection means for detecting ~~an~~ abnormality of the second voltage of said power supply means and outputting an abnormality signal;

user logic circuit means for outputting a trigger signal based on a signal from the CPU;

a mask signal generating portion for receiving the trigger signal to generate an NMI interrupt mask signal; and

a gate circuit for ~~making the signal from the power switching means invalid by~~ executing a logic operation with the mask ~~signal;~~ signal and the abnormality signal,

~~control means for setting prohibition of the NMI interrupt for said user logic circuit means in accordance with an abnormal signal from said abnormality detection means, and outputting the trigger signal in accordance with the setting to enable the mask~~

~~signal to be output from said mask signal generating portion to said gate circuit in accordance with the output trigger signal for making the signal from the power switching means invalid~~ wherein a signal from the power switching means is made invalid if said abnormality detecting means detects abnormality.

Claim 7 (cancelled)

8. (Currently amended) An ink jet recording apparatus according to Claim 6, further comprising second abnormality detection means for detecting an abnormal temperature rise of the recording head, wherein said second abnormality detection means ~~detects an abnormal temperature rise of a mounted recording head~~ outputs a second abnormality signal to the CPU if said second abnormality detecting means detects abnormality.

Claim 9 (cancelled)

10. (Currently amended) An ink jet recording apparatus according to Claim 1, ~~further comprising a~~ wherein the recording head is provided with a plurality of recording members including electrothermal converting elements for generating thermal energy for discharging ink.

Claim 11 (cancelled)

12. (Currently amended) A method for controlling an ink jet recording apparatus ~~provided with a CPU having plural modes including a mode to reduce power consumption by suspending a clock signal as an operational mode, and executing an NMI interrupt process with input of a signal from power switching means as an NMI interrupt signal, comprising the steps of~~ for executing recording with use of a recording head, the apparatus provided with a CPU having plural modes including a mode to reduce power consumption by suspending a clock signal as an operational mode, and executing an NMI interrupt process with input of a signal from power switching means as an NMI interrupt signal, the method comprising the NMI interrupt process,

the NMI interrupt step comprising:

~~retaining a power supply status flag in non-volatile memory means~~ a first interrupt setting step of setting a user logic circuit and a mask signal generating portion to prohibit the NMI interrupt;

~~outputting a trigger signal from user logic circuit means~~ a flag discrimination step of discriminating a power supply status flag retained on non-volatile memory means; ~~and~~

~~generating a mask signal in an NMI interrupt signal generating portion for NMI interrupt when the trigger signal is received, wherein~~ a capping step of causing execution of a capping operation of the recording head if discriminated that the power supply status flag is ON in the flag discrimination step;

~~an operational process of the ink jet recording apparatus is executed in accordance with the flag retained in said flag retaining step when the NMI interrupt process~~

~~is executed by the signal from the power switching means, and the flag retained in said flag retaining step is updated in said trigger signal outputting step for outputting the trigger signal in accordance with the setting for the user logic circuit, and the mask signal is generated in the mask signal generating step in accordance with the trigger signal for making the signal from the power switching means invalid by the generation of the mask signal until the operational process is completed~~ a first flag retaining step of retaining the power supply status flag on the non-volatile memory means with the power supply status flag being OFF;

a second interrupt setting step of setting the user logic circuit and the mask signal generating portion to cancel the NMI interrupt prohibition;

a second flag retaining step of retaining the power supply status flag on the non-volatile memory means; and

a mode shift step of shifting the operational mode of the CPU to the mode for reducing the power consumption.

Claims 13 and 14 (cancelled)

15. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 12, wherein in the NMI interrupt process, if discriminated that the power supply status flag is OFF, ~~the operational process is an operational process of power supply ON, and the flag is changed to suspend the clock signal as the operational mode change of the CPU for changing the mode from the mode for reducing the power~~

~~consumption~~ a recovery operation for causing the recovery of recording head is executed and the power supply status flag is retained on the non-volatile memory means with the power supply status flag being ON in said second flag retaining step.

Claim 16 (cancelled)

17. (Currently amended) A method for controlling an ink jet recording apparatus provided with a CPU ~~having plural modes including a mode to reduce power consumption by suspending a clock signal as an operational mode, and executing an NMI interrupt process with input of a signal from power switching means as an NMI interrupt signal~~ for executing an NMI interrupt process with input of a signal from power switching means as an NMI interrupt signal and a motor for executing a recording operation with use of a recording head, comprising the steps of:

generating a first voltage to be supplied to the CPU and the power switching means and a second voltage to be supplied to the motor;

detecting ~~an~~ abnormality of the second voltage of the power supply means by abnormality detection means and outputting an abnormality signal;

~~retaining a power supply status flag in non-volatile memory means;~~

outputting a trigger signal from user logic circuit means based on a signal from the CPU; ~~and~~

generating a mask signal in an NMI interrupt signal generating portion for NMI interrupt when the trigger signal is received; and

executing a logic operation with the mask signal and the abnormality signal, wherein

~~the abnormality is detected in said abnormality detecting step to output the trigger signal in said trigger signal outputting step in accordance with the abnormality, and the mask signal is generated in said mask signal generating step in accordance with the output trigger signal for making the~~ a signal from the power switching means is made invalid ~~by the generated mask signal~~ if abnormality is detected in said detecting step.

Claim 18 (cancelled)

19. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 17, further comprising a second abnormality detection step for detecting an abnormal temperature rise of the recording head, wherein ~~an abnormal temperature of a recording head mounted on the ink jet recording apparatus is detected in said abnormality detecting step~~ said second abnormality detection step outputs a second abnormality signal to the CPU if said second abnormality detecting step detects abnormality.

Claim 20 (cancelled)

21. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 12, wherein ~~a~~ the recording head is provided with plural

recording members including electrothermal converting elements for generating thermal energy for discharging ink.

Claim 22 (cancelled)

23. (New) An ink jet recording apparatus according to Claim 6, wherein if an AC voltage is input, said power supply means is capable of inputting the first voltage regardless of the control of CPU and outputs the second voltage on the basis of the control of the CPU.